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Elements of regional innovation system

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Abstract

This article focuses on the regional innovation system (RIS) and its elements. There are some base elements (participants): technological platforms, innovation networks, clusters, joint ventures. The purpose of the article is to give the reader some information on innovation-based economy. The article analyses main characteristics and form`s conditions of each element. The article reviews how each element operate with regional innovation system. The article also describes the most important characteristics of clusters, innovation network, and platform. In article announce that cluster is the most widespread form of cooperation. According to the article it is important to respect the interests of business, university and government.

Keywords: Regional innovation system, cluster, network, platform, joint venture, cooperation;

1. Introduction

In the proses of Russia`s transition from resource-based economy to an innovative type, there is a need to form a regional innovation system. Like any system, it is a set of elements. A regional innovation system (RIS) is a set of institutions whose activities are aimed at knowledge creation, dissemination and commercialization of knowledge.

Attention to the regional innovation system (RIS), as a separate element of national systems has been drawn recently, when it becomes an innovation way of development. Then, more and more researchers have begun to apply a systematic approach to mark the key participants of RIS. Among them are business, government and science. However, by themselves, these elements do not give a complete picture of the life level of regional innovation systems; forms of their cooperation common interest.

2. Discussion

It should be noted that every participant in RIS hasn`t a direct influence on it. To improve the competitiveness; to share knowledge, resources, personnel, and ideas; to be involved in the project activities and development programs, participants should be united.

There are specific features of the regional innovation system:

a) dissemination of new products and technologies is the main goal of RIS institutes;
b) knowledge is the main component of the system;
c) any system has a set of specific functions;

d) availability of relationships and communication between subsystems and components is a necessary condition .

The most common forms of association members of regional innovation systems today are clusters, innovation networks, technological platforms, joint ventures. Every form should be examined separately.

Technological platforms. The concept of a platform describes a set of system components that are strongly interdependent with other system components, and that also co-determine the architecture of the system's outcome. This concept underlies all kinds of technology-based products, collaborations that produce multi-product systems, and transactions between distinct sets of market participants [1]. The following platforms can be distinguished:

(1) product platforms;

(2) industry platforms;

(3) two-sided markets.

Tool Technology Platforms (TP) first appeared 10 years ago in the European Union (EU) as a mechanism for coordination of cross-country interactions. Technological platforms have been identified as the site where there is a strategy of development of scientific and technical fields, which then becomes the basis of specific programs and projects of the Framework Programme research projects of the EU. The main stake-holders are TP representatives of science, industry, public administration and financial institutions [2].

Like clusters, technological platforms have a number of features:

1) created "from below" upon an initiative of the stakeholders, mainly upon an initiative of the business or industry associations;

2) the participants of the platform should be future users of technology or product;

3) information transparency;

4) participants in the platform should be informed about the goals, platform objectives are current and future activities;

5) organizational form should be based on the discretion of its participants.

The main difference between the technological platforms and the clusters is that they are not tied to a concrete territory. The purpose of this tool is to develop advanced commercial technologies. Technological platforms often are a prerequisite to the formation of a cluster.

Innovation networks. The concept of network organization was introduced by a group of Japanese scientists (K. Imai, H. Itami et.) during a scientific revolution in the 70s of the XX. It is understood as a set of units, which in the framework of cooperation keep in touch with each other and save permanent connection [3]. In a simplified sense Innovation Network is an association of economic entities for collaborative work, in any way it is related to innovation. The discriminant mark of the innovation network is the conclusion of the neoclassical contract between its members. It is one of its economic attribute. Innovation networks form a single economic space of information which is characterized by the ability to divide the innovation process between different economic entities, geographically located in different places and at the same time be ensured in the unity of the stages of the innovation process through modern communication capabilities. We can consider this type of cooperation as an effective one in case when there is a strong connection in the network, it means to have a direct access to information by all stakeholders; the possibility of making changes and process adjustments of innovation by a participant in the network.

According to Larry Huston, managing partner of consulting firm 4INNO, future competitive advantage will depend on "innovation networks". Individuals and organizations are outside a company that can help in solving problems and finding new ideas for a creating growth.

Clusters. Among the forms of cooperation clusters in recent years attract great research interest. The term "cluster" exists not only in economy, but also in computer science, chemistry, physics, programming, and others. In Russian this word appeared in the 90s of the last century.

There are a lot of definitions of clusters. The term "cluster" was first mentioned by M. Porter 1990 and it is determined as a group of geographically adjacent companies with strong connection, operating in a particular area and characterized by common activities and complementary to each other [4].

Industry clusters are groups of similar and related firms in a defined geographical area that share common markets, technologies, workers, and they are often linked by buyer-seller relationships.

By sticking together, firms are able to benefit from such things as the neighbourhood's pool of expertise and skilled workers; it`s easy to access to component suppliers.

Economists explain clustering as a means for small companies to enjoy some economies of scale that usually reserved for large ones. An isolated Greenfield site in a depressed region where government grants are plentiful may bring a young company immediate benefits. But in the longer term the young company may be better off squeezing itself onto an expensive piece of urban real estate in close proximity to a significant number of its competitors [5].

Another explanation says that the cluster is association of companies within the same industry to make effective joint operations.

Joint ventures. The last form of organization is a joint venture that is a group of independent organizations, acting as partners of two or more active participants. Sometimes they are called strategic alliances, they cover a variety of different partners, including universities, non-profit organizations, business and the public sector.

3. Conclusion

Activities of RIS participants, their cooperation and team work are one of the most important issues requiring detailed consideration. There are many problems at the stage of evaluating the performance of the RIS, as it depends on the efficiency of cooperation between the participants.

Business is not interested in innovation and implementation if there is a pressure from the authorities, tax burden. Business is not interested in innovation if it cannot afford to modernize production, to test these innovations. Small and medium enterprises are not active participants in the innovation until they demonstrate the received.

Universities are not going to prepare qualified personnel, as there is no demands on this kind of personnel. The University cannot carry out high-tech research as they need the state program participation and support.

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